STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

REPORT OF EXAMINATION

TO APPROPRIATE PUBLIC WATERS OF THE STATE OF WASHINGTON

☒ Surface Water (Issued in accordance with the provisions of Chapter 117, Laws of Washington for 1917, and amendments thereto, and the rules and regulations of the Department of Ecology.)

☐ Ground Water (Issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and amendments thereto, and the rules and regulations of the Department of Ecology.)

PRIORITY DATE	APPLICATION NUMBER	PERMIT NUMBER	CERTIFICATE NUMBER
June 20, 2002	S2-29920		

NAME
Puget Sound Energy Inc

ADDRESS (STREET)	(CITY)	(STATE)	(ZIP CODE)
PO Box 97034 Mailstop OBC-14N	Bellevue	Washington	98009-9734

PUBLIC WATERS TO BE APPROPRIATED

SOURCE
White River

TRIBUTARY OF (IF SURFACE WATERS)
Puyallup River

MAXIMUM CUBIC FEET PER SECOND	MAXIMUM GALLONS PER MINUTE	MAXIMUM ACRE FEET PER YEAR
2000		72400

QUANTITY, TYPE OF USE, PERIOD OF USE
72400 Acre-feet per year — Public Water Supply Flow Augmentation, Recreation (Including Industrial & Commercial) — Year-round, as needed

LOCATION OF DIVERSION/WITHDRAWAL

APPROXIMATE LOCATION OF DIVERSION--WITHDRAWAL
200 feet East and 200 feet South from the North quarter corner of Section 2.

LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION)	SECTION	TOWNSHIP N.	RANGE, (E. OR W.) W.M.	W.R.I.A.	COUNTY
NE¼	2	19	6E	10	Pierce

RECORDED PLATTED PROPERTY

LOT	BLOCK	OF (GIVE NAME OF PLAT OR ADDITION)

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

The POU includes all King County UGA's and Utility Service Areas identified in the Central Puget Sound Regional Water Supply Outlook (Outlook), the Pierce County UGA's and Utility Service Areas in the Outlook except the Cities of Dupont, Eatonville, Roy, the Fort Lewis and McChord military bases, and the McKenna, Southwood, Graham Hill, Eldorado, and Chinook water systems. The POU also includes the Olympic View Water District in Snohomish County that is partially supplied by the Seattle Public Utilities (SPU) and the Gig Harbor peninsula.

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DESCRIPTION OF PROPOSED WORKS

Lake Tapps Water Supply Project.

DEVELOPMENT SCHEDULE

BEGIN PROJECT BY THIS DATE:	COMPLETE PROJECT BY THIS DATE:	WATER PUT TO FULL USE BY THIS DATE:
December 31, 2016	December 31, 2024	December 31, 2053

REPORT

BACKGROUND:

Puget Sound Energy (PSE) has submitted three water right applications to the Washington State Department of Ecology (Ecology) for the purposes of developing a public water supply project to provide municipal water supply including industrial and commercial purposes.

1. In Surface Water Application S2-29920 (filed on June 20, 2000) the applicant proposes to divert 2,000 cfs, 72,400 af/y of water from the White River for the public water supply, using the existing diversion for the White River hydroelectric project. The applicant states that the total combined diversion of water from the White River for the project and the WSP would not exceed 2,000 cfs under any circumstances, which is the current level of diversion under the hydropower project.
2. In Reservoir application R2-29935 (filed September 15, 2000) the applicant seeks a reservoir permit to store in Lake Tapps up to 72,400 ac/y of water that would be diverted from the river at a rate of 2,000 cfs, pursuant to application S2-29920.
3. In Surface Water Application S2-29934 (filed September 15, 2000) the applicant seeks a secondary permit to divert 72,400 af/y of water stored in Lake Tapps under R2-29935 for consumptive use as a municipal, commercial, and industrial water supply. Such diversion is proposed to occur at a peak rate of 150 cfs and a daily average 100 cfs. Under the proposal, water would be diverted for water supply from the forebay of the hydropower project. Water would then be treated and transmitted into a regional distribution system.

This *Report of Examination* addresses surface water application S2-29920 to divert water from The White River for the proposed water supply project associated with the Lake Tapps Reservoir. The ultimate application of this water to beneficial use is authorized under secondary Permit No. S2-29934. The investigative report for No. S2-29934 describes the beneficial use conditions of the water right. Report of Examination S2-29934 also includes a complete description of the project, protestant's concerns, and evaluation of the proponent's mitigation proposal.

INVESTIGATION:

The project site is located within the Puyallup-White River Watershed, Water Resource Inventory Area (WRIA) 10. The proposed water supply project would be located with, and use much of the existing infrastructure of PSE's White River Hydroelectric Project. The existing White River Hydroelectric Project diverts water from the White River at river mile 24.3 near the town of Buckley. Diverted water travels through the existing eight mile long diversion flowline consisting of flumes, canals, fish screens, five settling basins, and pipelines.

Diverted water is then stored in Lake Tapps Reservoir, a manmade reservoir consisting of 13 dikes impounding water in natural topography that once held four small lakes. Lake Tapps has a surface area of 2,700 acres and active storage capacity of 46,700 acre-feet. Water surface elevations can range from a normal maximum of 543 feet above mean sea level (ft msl) to a minimum of 515 ft msl, which corresponds with the bottom of the outlet works.

The main outlet from Lake Tapps is the 12-foot diameter concrete tunnel leading to the forebay, penstocks, and ultimately powerhouse and turbines of the White River Hydroelectric project.

After water is released from the turbines it flows through a 0.5-mile long tailrace canal into the White River. The reach of the White River between the diversion dam at RM 24.3 and the tailrace at RM 3.6 is referred to as the Bypass Reach.

Downstream of the confluence the tailrace and White River, the White River continues for 3.6 miles before joining the Puyallup River; this reach of the White River is referred to in this Report of Examination (ROE) as the lower White River. Below the confluence with the White River, the Puyallup River continues for 10.4 miles before entering Commencement Bay in Tacoma.

Current Water Right Authorization

The applicant currently diverts water from the White River and impounds it in Lake Tapps Reservoir for hydropower production. The applicant's water right for hydropower is evidenced by claims filed in 1895 and 1901. In 1974 PSE filed Claim No. 160822 with the State under Ch. 90.14 RCW confirming PSE's interest to protect and utilize the water right for 2,000 cfs and 1,440,000 acre-feet/year.

This new permit will utilize the same diversion point and same Lake Tapps Reservoir impoundment, and will not divert or impound any more water than is currently diverted and impounded under the hydropower right.

Puget Sound Energy has applied for a hydro power license from the Federal Energy Regulatory Commission (FERC). The license will provide conditions for operation of the diversion of water for hydropower purposes, including instream flow conditions for the by-pass reach of the White River. The quantity of water diverted for this permit will be affected by these conditions.

Puget Sound Energy has agreed to operate the diversion dam to meet the new instream flow conditions required under the FERC license. Furthermore, regardless of the flows required in the FERC license, Puget Sound Energy has agreed to exercise the permit in a manner that will not divert water from the White River if minimum flows of 250 cfs are not met between February 1st and April 30th of each year.

Diversion Dam and Intake

The existing diversion dam for the hydropower water right is located at White River Mile 24.3, in the City of Buckley, and is an 11-foot-high structure consisting of a concrete and rock filled crib structure 352 feet long, with a 4 foot high and 7-foot-high flashboards on top of the crib structure. The spillway extends the entire length of the dam. The flashboard system normally raises the water level 7 feet above the crib structure to elevation 671 feet mean sea level (ft msl).

The concrete intake is located just upstream of the dam on the left bank of the White River, and contains two stony gates, each 13 feet high by 15.5 feet wide, separated by a concrete pier. The rack gearing is motor operated, with an emergency 4 horsepower gasoline engine drive. There is also a manual means of lowering the gates if both of the other systems fail.

The existing eight-mile-long diversion flowline consists of a series of flumes and canals lined with wood, concrete, or earth, five settling basins, and two 10-foot diameter pipelines.

A concrete and wood flume conveys water from the headworks to the flowline sedimentation basins over a distance of approximately 5,000 feet with a gradient of 7 feet to the mile. The concrete portion of the flume was constructed in 1986 and runs for approximately 1,700 feet between the headworks and the wood-lined canal. Two rock chutes are located in this section for removal of entrained rocks and gravels; one chute is located adjacent to the headworks and consists of an 80-inch-wide gate with a maximum opening of 3 feet, the other chute is located near the transition of the concrete canal to the wood canal. The flume transitions from concrete to a wood lining for the remaining 3,300 feet. The wood flume is approximately 28 feet wide and 9 feet high with an approximate capacity of 2,000 cfs.

Location of Impounding Structure

This permit will allow utilization of the existing impounding structure of Lake Tapps Reservoir in Sections 4, 5, 8, 9, 10, 14, 15, 16, 17, 21, 22, 23, 27 and 28, Township 19 N, Range 5 E.W.M.

The Lake Tapps Reservoirs is impounded by a series of 13 dikes ranging in length from a few hundred to a few thousand feet, and from a height of a few feet up to 40 feet. The reservoir, once a series of four small lakes (Lake Tapps, Lake Kirtley, Crawford Lake, and Church Lake), was created by the construction of the dikes and the diversion of water from the White River into the reservoir. Lake Tapps Reservoir is approximately 4.5 miles long and 2.5 miles wide. The reservoir has an area of 2,700 acres and a storage capacity of 46,700 acre-feet and a normal maximum pool elevation of 543 ft msl.

There are 13 dikes that impound the reservoir. The dikes contain approximately 600,000 cubic yards of material. Documentation developed during the construction of the dikes indicates that the topsoil was first stripped to the impervious strata (till) beneath each dike. Steamrollers were then used to prepare the foundation. Fill material, consisting of cemented gravels obtained from nearby excavations, was transported to the site by dump cars on railway trestles. Large scrapers and donkey engines were then used for placement of the fill. The dikes were then finished using horse-drawn slip scrapers and wheelers. Initial design specifications required that the dikes have a minimum crest width of 40 feet, upstream slopes of 2.5 horizontal to 1 vertical, and downstream slopes of 2 horizontal to 1 vertical.

Legal Description of Property on Which Water Is to Be Used

See Report of Exam for Permit No. S2-29934P, incorporated here by reference.

Development Schedule

See Development Schedule of Permit No. S2-29934P, incorporated here by reference.

Investigation

The authority for granting a water right for diversion and storage is set forth in RCW 90.03.370, which provides:

> *All applications for reservoir permits shall be subject to the provisions of RCW 90.03.250 to 90.03.320. But the party or parties proposing to apply to a beneficial use for the water stored in any such reservoir shall also file an application for a permit, to be known as the secondary permit which shall be in compliance with the provisions of RCW 90.03.250 to 90.03.320.*

When applying for a reservoir permit, an applicant must give information related to the height of the dam and capacity of the reservoir and the uses to be made of the impounded waters. RCW 90.03.260.

Under WAC 508-12-260, a reservoir permit is required for a reservoir "adjacent to a stream channel when water will be required to fill the reservoir in addition to a constant diversion to keep it full." While Ecology's rules related to requirements for a reservoir permit do not necessarily require a reservoir permit in this instance because "a constant diversion to keep it full" is not required, Puget Sound Energy agreed to file the application for a reservoir permit to confirm that water will hereafter be stored at Lake Tapps Reservoir for municipal, industrial, and commercial purposes, as well as for hydropower under existing claimed rights. Additionally, based on the flow augmentation plan described in the report of examination for the secondary permit No. S2-29934P, the reservoir will also be beneficially used for recreational purposes.

Water right applications for beneficial use of water are required to meet the four-part test as set forth in RCW 90.03.290. This statute requires the Department to investigate the application and issue a permit if it finds that:

(1) there is water available for appropriation,
(2) the use is beneficial,
(3) the proposed appropriation will not impair existing rights, or
(4) be detrimental to the public welfare.

These statements are applicable to the actual appropriation of water to the beneficial use. Therefore, the full definition and full description of the investigation are provided in ROE for permit No. S2-29934.

Water Available

See Report of Exam for Permit No. S2-29934P, incorporated here by reference.

Beneficial Use

See Report of Exam for Permit No. S2-29934P, incorporated here by reference.

Impairment of Existing Rights

See Report of Exam for Permit No. S2-29934P, incorporated here by reference.

Detriment to the Public Interest

See Report of Exam for Permit No. S2-29934P, incorporated here by reference.

RECOMMENDATIONS:

It is recommended that Application S2-29920 be approved and a permit issued subject to the provisions below including the development schedule. Permit S2-29920 will authorize the diversion of 2000 cfs instantaneous quantity, not to exceed a withdrawal of 72,400 acre feet per year annual quantity from the White River for public water supply, including industrial and commercial purposes, and maintenance of the reservoir for recreational purposes, and for releases of water for instream flow needs as more fully described in Report of Examination for S2-29934.

PROVISIONS:

The Development Schedule in the Report of Exam for Permit No. S2-29934P is incorporated here by reference.
The Other Provisions and Conditions in the Report of Exam for Permit No. S2-29934P are incorporated here by reference.
The applicant shall pay permitting fees required for this permit prior to the issuance of the permit.

FINDINGS OF FACT AND DECISION:

Upon reviewing the above report, I find all facts, relevant and material to the subject application, have been thoroughly investigated. Furthermore, I find water is available for appropriation and the appropriation as recommended is a beneficial use and will not be detrimental to existing rights or the public welfare.

Therefore, I ORDER a permit be issued under Surface Water Application Number S2-29920, subject to existing rights and the provisions above, to authorize the diversion of 2000 cfs instantaneous quantity, not to exceed a withdrawal of 72,400 acre feet per year annual quantity from the White River for public water supply, including industrial and commercial purposes, and maintenance of the reservoir for recreational purposes, and for releases of water for instream flow needs as more fully described in Report of Examination for S2-29934. The place of use and point of diversion shall be as specified above.

Signed at Olympia, Washington, this 30th day of June, 2003.

Thomas Loranger
Water Resources Supervisor
Southwest Regional Office